4th Grade Overview of Standards

Common Core Standards (CCS)	TIMSS 2011 (Trends in International Math and Science Study)	Indiana Academic Standards
Critical Focus Areas Operations • Understanding and fluency with multi-digit multiplication • Understanding division involving multi-digit quotients Fractions • Equivalence • Addition/subtraction of fractions w/ like denominators • Multiplication of fractions by whole numbers Geometric Shapes • Analyzing and classifying geometric figures • Properties of geometric figures (parallel, perpendicular, angle measures, symmetry)	Content Domains Number • Whole Numbers • Fractions/Decimals • Number Sentences w/whole numbers • Patterns and Relationships Geometric Shapes and Measures • Points, Lines, and Angles • 2D and 3D shapes Data Display • Reading and Interpreting • Organizing and Representing	Core Standards Number Sense & Computation • Place Value including decimals • Multiplication and division facts up to 10 x 10 • Multiplying whole numbers • Additions and subtraction of fractions Geometry and Measurement • Angles and Lines • Rectangles

TIMSS Framework - - http://timssandpirls.bc.edu/timss2011/downloads/TIMSS2011_Frameworks-Chapter1.pdf

Indiana's Common Core – https://learningconnection.doe.in.gov/Standards/PrintLibrary.aspx

Indiana's Academic Standards - https://learningconnection.doe.in.gov/Standards/PrintLibrary.aspx

8th Grade Overview of Standards

Common Core Standards (CCS)	TIMSS 2011 (Trends in International Math and Science Study)	Indiana Academic Standards
Critical Focus Areas Expressions and Equations • Formulating and reasoning • Modeling bivariate data with linear equation • Solving linear equations and systems of linear equations Functions • Understanding the concept of functions • Using function to describe quantitative relationships Geometry • Analyzing 2D and 3D space and figures using distance, angle, similarity, and congruence • Pythagorean Theorem	Content Domains Number • Whole Numbers • Fractions/Decimals • Integers • Ratio, Proportion, and Percent Algebra • Patterns • Algebraic Expressions • Equations/Formulas and Functions Geometry • Geometric Shapes • Geometric Measurement • Location and Movement Data and Chance • Data Organization and Representation • Data Interpretation • Chance	Core Standards Number Sense and Computation • Integer Exponents • Square roots Geometry and Measurement • Constructions and Properties of Shapes • Pythagorean Theorem • Rates • Solids Algebra and Functions • Solving Equations and Inequalities • Linear Functions Data and Probability • Analyzing data • Evaluating Claims, Selecting Samples, and Analyzing Bias • Simple Experiments

Mathematical Processes

Common Core Standards (CCS)	**TIMSS 2011** **(Trends in International Math and Science Study)**	**Indiana Academic Standards**
Standards for Mathematical Practice • Make sense of problems and persevere in solving them • Reason abstractly and quantitatively • Construct viable arguments and critique the reasoning of others • Model with mathematics • Use appropriate tools strategically • Attend to precision • Look for and make use of structure • Look for and express regularity in repeated reasoning	Standards Assessed come from three content domains and three cognitive domains Cognitive Domains Knowing • Recall • Recognize • Compute • Retrieve • Measure • Classify/order Applying • Select • Represent • Model • Implement • Solve routine problems Reasoning • Analyze • Generalize/specialize • Integrate/synthesize • Justify • Solve non-routine problems	Process Standards Problem Solving • Build new mathematical knowledge through problem solving • Solve problems that arise in mathematics and in other contexts • Apply and adapt a variety of appropriate strategies to solve problems • Monitor and reflect on the process of mathematical problem solving Reasoning and Proof • Recognize reason and proof as fundamental aspects of mathematics • Make and investigate mathematical conjectures • Develop and evaluate mathematical arguments and proofs • Select and use various types of reasoning and methods of proof Communication • Organize and consolidate mathematical thinking through communication • Communicate mathematical thinking coherently and clearly to peers, teachers and others • Analyze and evaluate the mathematical thinking and strategies of others • Use the language of mathematics to express mathematical ideas precisely